AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application:

1. (Currently Amended) An optical differential phase shift keyed RZ transmitter comprising:

a differential encoder having first and second outputs, the first and second outputs being of opposite polarity to one another,

a first RZ converter connected to the first output of the differential encoder and a second RZ converter connected to the second output of the differential encoder; and

a dual electrode Mach Zehnder modulator to which an unmodulated coherent light source is coupled, wherein the output of the first RZ converter is connected to a first electrode of the Mach Zehnder modulator and the output of the second RZ converter is connected to a second electrode of the Mach Zehnder modulator and wherein the first and second electrodes are driven by the outputs of the first and second RZ converters sequentially such that an output light signal of the Mach Zehnder modulator is pushed out of phase by driving the first electrode or pulled out of phase by driving the second electrode.

2. (Currently Amended) A transmitter according to claim 1, further including a first RZ driver connected to the output of the first RZ converter and a second

RZ driver connected to the output of the second RZ converter ~~inverting RZ drivers to~~ ~~convert RZ signals output from the RZ converters to inverted RZ signals~~.

3.   (Previously Presented)   A transmitter according to claim 1, wherein one of the RZ converter outputs can be delayed by adjusting the phase of a clock signal input to the RZ converter.

4.   (Currently Amended)   A method of encoding data as a differential phase shift keyed RZ optical signal comprising the steps of:

differentially encoding the data to produce two data streams of opposite polarity;

converting each data stream to RZ signal format; and

driving a first electrode of a dual electrode Mach Zehnder modulator to which an unmodulated coherent light source is coupled with a first of the two data streams and sequentially driving a second electrode of the dual electrode Mach Zehnder modulator with a second of the two data streams such that an output light signal of the Mach Zehnder modulator is pushed out of phase by driving the first electrode or pulled out of phase by driving the second electrode.

5.   (Original)   A method according to claim 4, wherein the RZ data streams are inverted RZ data streams.

6.   (Previously Presented)   A transmitter according to claim 2, wherein one of the RZ converter outputs can be delayed by adjusting the phase of a clock signal input to the RZ converter.

7.   (New)   A transmitter according to claim 2, wherein the first and second RZ drivers are inverting RZ drivers configured to convert RZ signals output from the RZ converters to inverted RZ signals.

8.   (New)   A transmitter according to claim 2, wherein the first and second RZ drivers are non-inverting RZ drivers.